Eur J Vasc Endovasc Surg 16, 43–46 (1998)

A Survey of Current Attitudes of British and Irish Vascular Surgeons to Venous Sclerotherapy

R. B. Galland*[1], T. R. Magee[1] and M. H. Lewis

Departments of Surgery, Reading[1] and East Glamorgan General Hospital, Mid Glamorgan, U.K.

Aim: *To determine current practice amongst vascular surgeons regarding venous sclerotherapy.*
Method: *A postal questionnaire was sent to 350 members of the Vascular Surgical Society of Great Britain and Ireland.*
Results: *There were 218 replies (62%). Forty surgeons (18.3%) never injected varicose veins (VV) although six injected venous flares. Most surgeons (n=168, 77.1%) reserved sclerotherapy for residual VV postoperatively. Primary varicose veins without proximal incompetence were injected by 152 (69.7%) and recurrent VV without proximal incompetence by 141 (64.7%). Sixteen surgeons only injected residual postoperative VV. Few surgeons injected VV in the presence of proximal incompetence.*

Where specified, 46% of respondents were injecting fewer VVs than in previous years. Only 5% were injecting more. By contrast, 44% were injecting more venous flares than previously (p<0.001). Eight different sclerosants were used, the commonest being STD (146 surgeons) and Sclerovein (33). The median number of patients treated with sclerotherapy was 11–50 per year compared with 51–150 per year who were operated upon. The median time advised for compression was 2 weeks (range – a few minutes – 2 months). Treatment was repeated at a median of 4 weeks (0–6 months). Thirty-two surgeons obtained written consent. All but eight respondents discussed potential complications, the commonest being staining and ulceration. Forty-six surgeons had patients who had experienced serious complications, the commonest being ulceration. There was one reported death from a pulmonary embolus.
Conclusion: *Sclerotherapy is being used less frequently for VV. Most surgeons use it for residual VV and for those without proximal incompetence.*

Introduction

Sclerotherapy has been advocated for the treatment of varicose veins (VV) for over 30 years.[1] Despite this, its role, particularly in relation to other types of treatment, has yet to be fully established. Sclerotherapy has been suggested as an alternative to surgical treatment or to be used in combination with it. In the latter area it has been used at the time of operation[2] or on an outpatient basis following saphenofemoral[3] or saphenopopliteal ligation. Several different sclerosants are available and different techniques have been advocated for their usage. Tournay's technique consists of sclerosing the highest reflux point and moving distally. Compression is advocated for only selective cases and for a short time.[4] Sigg advocates a technique which requires sclerotherapy of distal varicose veins followed by dealing with more proximal varices.[5] In Fagan's technique sclerotherapy is carried out on perforators moving from the most distal to most proximal.[1] In the latter two techniques compression is strongly advised. Ultrasound-guided sclerotherapy has recently been advocated.[6]

A recent consensus statement on varicose veins sclerotherapy emphasised the difficulty in defining the true efficacy of the technique and under what circumstances it should be used.[7]

The aim of this study was to determine the current practice and attitude towards venous sclerotherapy of British and Irish vascular surgeons.

Methods

A postal questionnaire was sent to members of the Vascular Surgical Society of Great Britain and Ireland (VSS).

Questions were directed towards indications for sclerotherapy, whether written consent was obtained and whether potential complications were discussed. Details of serious complications encountered by surgeons were sought. The numbers of episodes of scleropathy and operations per year were noted along with the grade of those undertaking sclerotherapy in their

* Please address all correspondence to: R. Galland, Royal Berkshire Hospital, London Road, Reading, RG1 5AN, U.K.

1078–5884/98/070043+04 $12.00/0

Table 1. Indications for sclerotherapy and sclerosants used.

Use of sclerotherapy	*n*	(%)	Comments
Never	40	(18.3)	6 inject flares
Primary with proximal incompetence	10	(4.6)	
without proximal incompetence	152	(69.7)	
At operation	9	(4.1)	
Residual after operation	168	(77.1)	16 use scleropathy for this indication only
Recurrent with proximal incompetence	10	(4.6)	
without proximal incompetence	141	(64.7)	
Sclerotherapy carried out by			
Consultant	111		
Specialist registrar	88		
BST	32		
Staff grade/clinical assistant/GP assistant	35		
Nurse	2		
Sclerosant used			Fibro-vein (R)
Sodium tetradecyl sulphate	146		
Sclerovein	33		Polidocanol
Aethoxysklerol	9		
Ethanolamine	8		
Scleremo	7		Chrome alum, glycerol
Hypertonic saline	4		
Salicylate	1		
EDTA	1		
Time of compression	Median 2 weeks		
a) VV	(10 min–8 weeks)		
b) venous flares	Median 4 days		
	(a few min–6 weeks)		
Interval at which treatment repeated	Median 4 weeks		
a) VV	(0–6 months)		
b) venous flares	Median 4 weeks		
	(0–6 months)		

department. The length and type of compression and interval between repeat treatments were noted along with the sclerosant used both for varicose veins and venous flares. Finally surgeons were asked to comment as to whether they were doing more, the same or less sclerotherapy than in previous years.

Results

Questionnaires were sent to 350 members of the VSS. Replies were received from 218 (62%). Forty respondents claimed never to use sclerotherapy (Table 1). Of the remainder, most used sclerotherapy for primary or recurrent varicose veins without overt saphenofemoral or saphenopopliteal incompetence. The main use was for residual veins following operation. The median number of patients treated with sclerotherapy was 11–50 per year, compared with 51–150 who were operated upon (Fig. 1).

Sclerotherapy was mostly given by consultants or specialist registrars. Eight different sclerosants were used, the commonest being sodium tetradecyl sulphate. The median time for compression following sclerotherapy for varicose veins was two weeks whereas that following treatment of venous flares was only four days. The median interval between treatments for both venous disorders was 4 weeks.

Only 32 respondents (17.4%) obtained written consent, although 178 (96.7%) discussed potential complications: the main ones mentioned being skin staining and ulceration (Table 2). Written information sheets were provided by four surgeons. Serious complications had been encountered by 46 surgeons (25.5%), ulceration being the commonest. Only three surgeons had experience of patients having anaphylactic reactions. One surgeon reported a death due to pulmonary embolus.

A specialised varicose vein clinic was available to 78 respondents (35.8%), six of whom did not carry out sclerotherapy.

Significantly more surgeons are increasing their use

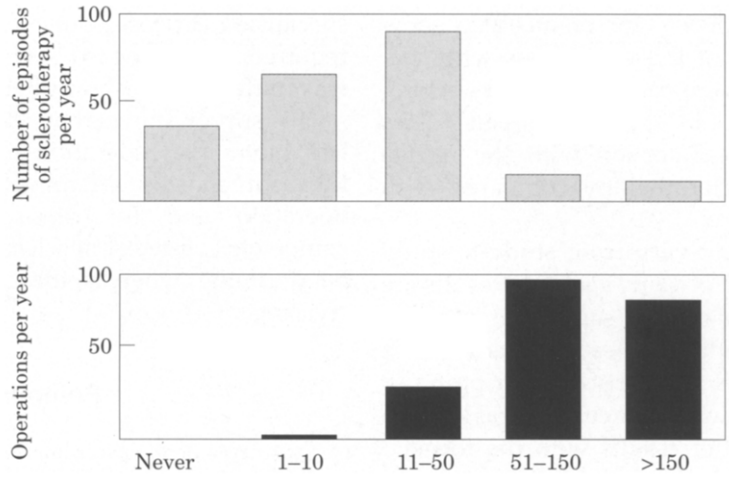

Fig. 1. Number of episodes of sclerotherapy or operations per year (where specified).

Table 2. Consent and complications (n = 178 + 6 respondents who injected venous flares only).

Written consent obtained	32
Potential complications discussed	178 (96.7%)
Staining	115
Necrosis/ulceration	101
Phlebitis	43
Recurrence	37
Pain	32
DVT	19
Lumps	10
Allergic reaction	9
Serious complications encountered	46 (25.5%)
Ulceration	19
Staining	8
DVT/pulmonary embolus	4 (1 fatal PE)
Anaphylaxis	3
Staphlococcal septicaemia	1
Severe pain	1

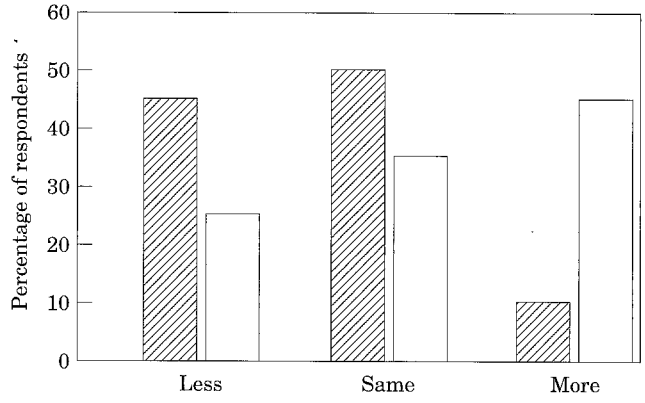

Figure 2. Changing practice for sclerotherapy of VV (▨) or venous flares (□).

of sclerotherapy for venous flares compared with those increasing their use of sclerotherapy for varicose veins (Chi-squared 58, d.f. 1, $p<0.001$, 95% CI 0.28–0.49), Fig. 2. Similarly fewer surgeons are using sclerotherapy for VV than flares (chi-squared 14, d.f. 1, $p<0.001$, 95% CI −0.32–−0.12). Although approximately 50% of surgeons have not changed their practice in relation to VV sclerotherapy significantly more have changed their practice regarding treatment of flares (chi-squared 5.7, d.f. 1, $p<0.025$, 95% CI −0.28–−0.03).

A total of 54 respondents referred patients with venous flares to other departments. The majority referred to dermatologists (37) or plastic surgeons (14) for microsclerotherapy or laser treatment.

Discussion

Patients with varicose veins make up a significant proportion of surgical waiting lists.[8] Even though most operations can be carried out on a day case basis,[9] they account for a considerable amount of NHS resources. Furthermore, between 1975 and 1987 there was almost a doubling of hospital admissions for varicose vein treatment.[10] Despite this our survey shows that fewer members of the VSS are utilising sclerotherapy for varicose veins than in previous years. Far more patients are being offered operation. Some units have experience of many thousands of episodes of sclerotherapy with acceptable early results.[5] However, most VV are referred to surgeons and it is clear that primary sclerotherapy will therefore be offered to few patients. In a recent survey of 229 newly referred patients with varicose veins, operation was offered to 49%, but

sclerotherapy to only 8.7%.[11] Our results also show that approximately half of those surgeons who specified stated that they were carrying out less sclerotherapy for VV than in previous years. This presumably reflects dissatisfaction with the results and complications of sclerotherapy compared with operation.

Results of sclerotherapy vary from study-to-study depending upon the type of veins injected. Results are "poor" for the treatment of long saphenous varicose veins and "fair" for treating non-saphenous varicose veins and perforators.[7] A comparison of stripping or sclerotherapy combined with saphenofemoral ligation showed significantly better results with the former.[3] Few respondents in our series were prepared to use sclerotherapy in the presence of proximal incompetence. The main indication for its use being residual varices postoperatively.

The present study shows that 178 (96.7%) of respondents discussed potential complications with patients prior to sclerotherapy. Skin discolouration was the commonest problem mentioned followed by ulceration. Serious complications have been experienced by 46 surgeons (25.5%). Ulceration or skin necrosis was the commonest. Four surgeons had patients who suffered from thrombotic complications, one of whom died of a pulmonary embolus. Risk of complication depends on such factors as the type, volume and strength of sclerosant injected. Ulceration has been described in up to 3% of cases.[12] However, a recent large series describes this problem in less than 1% of patients.[13] The commonest problem likely to result in litigation involves extravasation of sclerosant following sclerotherapy.[14] Estimates suggest that skin staining occurs in about 8% and flare formation in 4% of cases following sclerotherapy.[15]

There was considerable variability in the length of time compression was advised after VV sclerotherapy, ranging from a few minutes to 8 weeks. The median time which compression was advised for venous flares was 4 days compared with 2 weeks for VV. It has been suggested that prolonged bandaging is not required after sclerotherapy.[16] Furthermore support stockings may be as effective and more comfortable than bandages.[17]

The need for training programmes in sclerotherapy has recently beem emphasised.[7] Only 71 surgeons who carried out sclerotherapy in our survey have a specialised varicose vein clinic. Such clinics would be required for training to be effective. Most sclerotherapy was undertaken by consultant or specialist registrars.

This survey shows that sclerotherapy is being used less often than operation for the treatment of VV. Most surgeons use sclerotherapy for residual VV after operation and for those without proximal incompetence. Interest in sclerotherapy for VV seems to be declining whereas that for venous flares is increasing.

References

1 Fegan WG. Continuous compression technique of injecting varicose veins. *Lancet* 1963; **ii**: 109–112.
2 Moszkowicz L. Behandlung der krempfadern mit zuckerinjektionen kombiniert mit veneligatur. *Zbl Chir* 1927; **54**: 1732.
3 Rutgers PH, Kitslaar PJ. Randomised trial of stripping versus high ligation combined with sclerotherapy in the treatment of the incompetent greater saphenous vein. *Am J Surg* 1994; **168**: 311–315.
4 Tournay R. La sclerose des varices. *Expansion Scientifique Françoise* 1985; 4th edn Paris.
5 Sigg K. *Vavizen, Ulcus Cruris und Thrombose.* Berlin: Springer–Verlag, 1976.
6 Kanter A, Thibault P. Saphenofemoral incompetence treated by ultrasound-guided sclerotherapy. *Dermatol Surg* 1996; **22**: 648–652.
7 Baccaglini U, Spreafico G, Castoro C, Sorrentino P. Consensus conference on sclerotherapy for varicose veins of the lower limbs. *Phlebology* 1997; **12**: 2–16.
8 Umeh HN, Faber RG, Reece-Smith H, Galland RB. Impact of a waiting list initiative on a general surgical waiting list. *Ann Roy Coll Surg Eng* 1994; **76** (Suppl.): 4–7.
9 Ramesh S, Umeh HN, Galland RB. Day case varicose veins operations: patient suitability and satisfaction. *Phlebology* 1995; **10**: 103–105.
10 Campbell WB. Varicose veins. An increasing border for the NHS. *Br Med J* 1990; **300**: 763–764.
11 O'Leary DP, Chester JF, Jones SM. Management of varicose veins according to reason for presentation. *Ann R Coll Surg Engl* 1996; **78** (pt. 1): 214–216.
12 Reid RG, Rothnie NG. Treatment of varicose veins by compression sclerotherapy. *Br J Surg* 1968; **55**: 889–895.
13 Conrad P, Malouf GM, Stacey MC. The Australian polidocanol (aethoxysklerol) study. Results at 2 years. *Dermatol Surg* 1995; **21(4)**: 334–338.
14 Keddie N. Risk management in vascular surgery. In Galland RB, Clyne CAC, eds. *Clinical Problems in Vascular Surgery.* Edward Arnold, 1994: 238–241.
15 Partsch H, Baccaglini, Stemmer R. Questionnaire regarding the practice of sclerotherapy. *Phlebology* 1997; **12**: 43–55.
16 Fraser IA, Perry EP, Hatton M, Watkin DFL. Prolonged bandaging is not required following sclerotherapy of varicose veins. *Br J Surg* 1985; **72**: 488–490.
17 Scurr JH, Coleridge-Smith P, Cutting P. Varicose veins, optimum compression following sclerotherapy. *Ann Roy Coll Surg Engl* 1985; **67**: 109–111.

Accepted 12 February 1998